STUDY of PRIMARY HEALTH CENTRES IN MAHARASHTRA

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Chapter on :

Drugs and Pharmaceuticals at the PHC

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DRUGS AND PHARMACEUTICALS

Drugs constitute the chief tool of medical care in the hand of doctors and paramedicals at the PHC. The felt-need of the people in health care is that of curative medicine. People recognise the value and importance of health care services in terms of the availability of doctor at the PHC, the number of tablets, capsules and injections, and the effectiveness of these drugs. This is because the curative service is normally experienced as a direct doctor patient relationship with the intake of drugs to alleviate suffering. Hence, whenever people are casually questioned about their public health care services their response is normally about the availability of doctor, of drugs and their effectivity. Needless to say, no public health effort can attain any credibility in the eyes of people unless it also addresses the `felt´ health-need, i.e. curative needs of the masses. Even in most of the NGO experiments for evolving alternative methods of health care, the people´s appreciation of health care is primarily concerned with the meeting of their curative needs by the doctor or trained health workers.

Hence, besides the personnel the availability and quality of drugs at the PHC is of crucial importance. Politicians also harp on this issue in their day to day interaction with the people. In our present study of the PHC as well as in our other studies in rural Maharashtra we had many opportunities to observe the behaviour of politicians-both of the ruling party and of the opposition. When they encounter health workers in the course of official meeting of the health committee of the Zilla Parishad or occasionally at the Taluka level, they lecture the staff about the virtues of Family Planning. Throughout such a meeting sometimes lasting over 3 hours, the health workers are warned and threatened for not completing their targets. Normally not a word is uttered about the availability of drugs or treatment of patients.

But the same politician/s and/or their local Taluka and village level leaders, when they talk to the people or visit sub-

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centres in the presence of the people, they castigate health workers and bureaucrats for not supplying enough medicines for doctors not making regular visits and other curative matters. We also happened to be present when new PHC buildings were inaugurated by some ministers. In their inauguration speech the health care was always presented to the people's gathering in terms of curative services. On one occasion, however, immunisation was also talked about with some force.

We also had an opportunity to interview four doctors at one Rural Hospital (RH) immediately after a visit by one Minister. This is how they described the visit.

"As soon as he arrived at the RH, he went straight to inspect the latrines. Then visited wards and inspected beds. He removed bed covers to inspect condition of some mattresses. Then he went to the Medical Officers' cabin. The cabin as usual was in a mess and untidy. He fired us doctors for some time and instructed about the importance of cleanliness and tidiness. Then he made a point about the ambulance. The ambulance at our RH is a mini-bus and twice the size of the matador ambulance. The minister asked the DHO and the DD whether such a big ambulance could go to the interior villages on kuccha roads. He scolded both of them for some time and instructed them to supply the RH a Matador type ambulance. This means after some time we will get a good ambulance but some other poor RH will get ours till they are also visited by some VIP.

"Anyway, upto this it was quite routine for us and so we were not perturbed. We were waiting for him to come to the real point. We knew that the local MLA had complained to him about the non-availability of drugs and 'saline' bottles in particular. You know in our are a all patients with some political or economic clout demand intravenous 'saline' injections because they believe that it cures fast and shows the people that they are really very ill. We had received information about this complaint from the

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DHO's office as well as from Bombay. That is, it was a message for us to remain prepared about drugs and be prepared in such a way that the health department does not lose face before that MLA and the prominent people of that area.

"Naturally we were prepared. We had gone to the DHO's office and the Civil Hospital and obtained enough medicine to impress the Minister. In fact we had a cupboard full of `saline' bottles in the RH on that day. So when the minister visited the dispensary and then the drugs store-room, he found everything in order and available. The only thing of importance he could do was to shake a few `saline' bottles to see if there was any impurity. Well we do not know what that local MLA told him on finding enough drugs or how the minister ultimately handled that MLA's complaint. But we very well know that we could save ourselves and our department on this very sensitive political issue of drugs".

At the village level the issue is even more volatile. Whenever we the project staff visited the sub-centre in the PHC jeep, people in no time came to know that "some officials from Bombay have come `to inspect' sub-centre". Usually few people would come to meet us and sometimes small crowd would gather outside the sub-centre. The major complaint against the sub-centres was about the non-availability of drugs, especially injections. Several times the village leaders complained in such a manner that the health workers found it quite humiliating. Indirectly, and sometimes directly, they also alleged that either health workers or the doctor were selling of drugs and that was why they were not available. Such allegations used to result in a small altercation between the village leaders and the health workers, particularly the female worker as more often she is identified with the running of the sub-centre. Many female health workers reported that scarcity of drugs was used by the leaders to harass them.

In short, question of drugs is uppermost in people's mind

whenever any discussion about the working of PHC is started with them. Those who are closer to them and politically represent them know this quite well. The health workers also know this.

People About Drugs at the PHC and RH

We never had to persuade people to talk about drugs and doctors at the PHC and the RH. Most of our discussions started with them only. People talked from their experiences. Since we were staying at the PHC or the RH and were able to see the weakness and strength of the PHC very closely, sometimes we felt that their reactions were somewhat impressionistic and conditioned by the wrong learning they have had from the irrational practices of the private medical practitioners. However, in a course of time, when similar comments were repeated across the PHCs and RHs, a pattern of how people have actually experienced the PHC as regards availability and effectivity of drugs started becoming clear.

People usually do not give opinion about drugs independent of the health worker. The faith in drug is related to the faith in the health worker and vice versa. Whenever the health worker has no faith in the drugs supplied by the Government and the drugs supplied by the Govt. are not delivered to the people with care and in humane manner by the health worker, the credibility of the system is lost. Thus, from our conversations with the people, we often found it difficult to separate people's criticism of inadequate availability of tablets, capsules and injections from the irregular presence of the doctor, his private practice and the high amount charged by him in the practice. Just as the credibility of the PHC doctor as healer is generally low, people's opinion about drugs at the PHC is also found to be substantially low.

"Shall I tell you the truth about your department and the

davakhana, saab?" thus started many of our respondents while conversing with us about the PHC and the RH. "Your department never provides poor people with good medicines," said one of them. Realising that there were some local lower level health workers within hearing distance, he added, "Whatever good medicine is supplied it never reaches upto the village as it is misappropriated at the higher level. Even when your workers come for immunisation in our village, they never bring medicine to treat diseases". Then he looked at the MPW and said, "What this worker of yours is going to give us when he goes around in the village? He only has tablets for malaria and nothing else". Whenever we tried to explain to them that these workers are no longer malaria worker but are doing other work like disinfecting wells, immunisation, family welfare etc. we received a quick reply, "May be so for you and the government, they do more work. But as far as the need of patients is concerned, they are useless except for malaria".

This was a disturbing finding and initially we could not understand why the MPW was still called a malaria worker. Later on we found at most of the places that the MPW carried only anti-malarial drugs. Sometimes anti-pyretics and analgetics were also carried, but the anti-malarials with slides were invariably with them. Thus, another often repeated response from the people about the medicine with the MPW was that:

"A malaria worker does come to our village. He comes once in 10 to 15 days and goes around in the village, and gives tablets to those who are having fever and takes their blood. In addition to that he does not do anything (any curative work). Yes, sometimes in a year or two he accompanies the DDT spraying team too. Whenever we have asked for medicine for other diseases, he has always replied that he had no other medicine with him".

The sub-centre : Two major complaints regarding the curative medicine at the sub-centre were (1) Absolute lack of any medicine

either due to grossly irregular functioning of the subcentre or due to the PHC uprising the drugs meant for some of the subcentres (2) Availability of very few medicines and long delay between supply of medicine after the earlier stock is exhausted.

The village people normally demand injections (except in some tribal areas) from the ANMs at the subcentre. They resent when only tablets are given. They resent more when the same type of tablets are given for several diseases. Their constant complaint with some of the better functioning subcentres was that they were given the same white tablets or yellow tablets and that no capsule was ever given or the ANM does not give injections. At few subcentres, we found ANMs keeping a vial of the B.complex injections to meet such demand of injections from people.

Thus, the curative need of the people is largely not catered to by the sub-centres. This is not only due to the irrational demands from the people, for example, that of injections, but also due to the fact that the health workers have in sufficient time to propagate and practice rational therapeutics, nor are they motivated to do so. They often lack basic medicine to put this into practice.

Irregularity of drug supply at the sub-centre is caused both by the supplying agency as well as by the PHC. The PHC often appropriates the drugs meant for the sub-centre. Due to this the doctors and ANMs have evolved elaborate methods to spread misinformation that health workers are not so competent to handle diseases and their chief work, particularly that of the ANM, is family welfare and immunisation. Some doctors explained to us, in good faith and with genuine concern, that if such misinformation is not given, the already vulnerable ANMs would be harassed more by the power groups in the villages for no fault of theirs. The following accounts illustrate this point:

One ANM living in a 7 feet x 7 feet mud room given by the

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up a sarpanch of the village at Rs. 15 per month rent and running her sub-centre there narrated her problem by stating that, "we know people are not happy with our work. How could they be when we are not good at providing curative services? I remember when doctor came last time to this sub-centre, many villagers gathered to complain that nurse was not having enough medicines and was most of the time roaming around for the FP cases or immunisation.

"The villagers had complained in a very bad language. But our doctor is very nice person. He never gets angry. His language is sweet. He told me not to worry and took them to the Gram Panchyat building. He had a meeting there with them. He told them that I was not even a nurse. I was only an auxiliary nurse, so there is no question of my doing doctor's work and the work of a nurse that people see in big hospitals. Normally I am not supposed to treat patients, and when necessary, to treat only minor problems. He further told them that I was appointed to find our about their health problems, to see ANC-PNC cases so that they do not suffer.

"He explained all these things so nicely that villagers were pacified. He talked in such a way that people's expectations were not completely dashed, but at the same time he made it clear that they should not expect too much from the worker.

"You know there are very few such doctors who go out of their way to defend us in such a way and tell people in a convincing way what the government actually wants us to do."

At another sub-centre when we were sitting with the doctor and going through the ANM's records, some villagers, including the sarpanch arrived there. When they came to know that we were from Bombay and sent by the government, they thought it was the time to air their grievances so that we could take note of it. Invariably, one of the first issue raised by them was about the drugs and the curative services. Invariable the target of attack

was the ANM. They did not criticise the doctor directly, but said in a diplomatic way, "the doctorsab, I am sure, sends medicine to the sub-centre regularly, but our health workers are callous and don't use them for our people."

Initially the doctor was embarrassed and on the defecive. But soon he changed his tactics and asked them,

"Do you know what is the work of these health workers? You cannot expect kind of medical work that doctor does from a person who has passed only 10th standard.

"If our workers start giving injections as you are demanding, who will be responsible if there is any death due to `reaction'? At that time you all will come to beat us and raise Assembly question".

From the above mentioned samples of responses and incidences, it is clear that some of the demands made by the people is unjustified and irrational. Some might be even motivated as it was not possible for us to understand all the minute politics of each sub-centre. Nevertheless what comes out clearly is that people's curative needs are not adequately met by the sub-centre due to lack of any serious organisation for curative work at that level and the lack and or irregular supply of curative drugs.

The PHC and the RH : The people made several critical points about the drugs at the PHC and RH. Some of these are : (1) The drugs are not available in enough quantity and variety (2) Same injections are given to everyone (that is, one or two injections in the OPD given to majority of them) (3) The drugs are very substandard and so not effective. (4) The doctors give prescriptions to buy drugs from outside and therefore a visit to the PHC is almost as costly as a visit to the private practitioners (5) the poor are not so cared for but when the leader and the rich go, the doctor is even seen to get medicine

from the store-room to given them (6) all medicines and injections are available in the doctor's house where he does private practice but not at the PHC (7) some were outright allegations of doctor misappropriating medicines and using/selling them in the private practice.

Once in a village covered by the PHC which has the RH attached to it, we organised a meeting of the elites of the village. They comprised of the sarpaches of the village and of the nearby village, a Talathi, one graduate young man and few other prominent persons.

First they made comments on the doctors' impersonal way of dealing with them, but quickly came to the point of medicine, "the doctors write down names of medicine but half or sometimes all of which we have to buy from outside. They usually give us injections".

"Yes, a B-complex injection", interjected the Sarpanch from the nearby village, "we don't know what good it does to us".

"I once went with a patient to the hospital. It was closed. I went to doctor's house. He gave treatment and charged Rs.15. Yes I have also gone there in hospital hours. But I had to buy expensive medicines from the private medical store every time". As soon as this point was made by one, others started competing to narrate their own but similar experiences. All of them ended saying.

"If we have to pay so much for medicine either to the PHC/RH doctor or to the private medical stores, why shouldn't we go to the Private Practitioners and pay properly?"

As the above points were intertwined with their narration of impersonal and even sometimes callous behaviour of the doctors, we tried to verify whether they preferred private practice doctors to

the government doctors and the PHC/RH all the time. They promptly replied, making us realise how clearly they understood their own economics:

"Of course we will go to the government Hospital if full treatment is available there. Why should we go to the private practitioner and spend money when medicines with good doctors are there in the PHC itself?"

The above conversation was not an isolated incident. We encountered such people almost everywhere. Sometimes people felt that we were doubting their intelligence as they found it very clear in their mind that if free government services with quality drugs and doctors were available, it would be naturally more economical for them to utilise such services. Further, this was also told to us by the people who belonged to higher economic and political status, and who currently least use the government services and prefer to go to there private practitioners.

The response from the group meetings comprising of people from deprived social strata and classes, was similar but much more personal. For they are currently the actual users of the government curative services. They suffered the most when doctors say that medicine or injection was not available and give them outside prescription. These are the people, who in search of strong medicine, alternate between the private practitioners and the PHC because they can't afford longer treatment with the private practitioners and do not get satisfaction from the PHC.

We observed a marked contrast between the way the 'elites' of the village complained about problems of drugs and doctors at the PHC/RH and the way groups of dalits and poor people did. The former group tried to reason and cited certain cases to prove its point, but more often it discussed the issue in a cold blooded way. One could see it easily that there was no personal involvement, no helplessness, but rather, sometimes real and often

fake, concern for the poor of the village. But the latter group that of dalits and poor- flared up faster during the discussion on the PHC than the former. But it was often an anger coming out of helplessness.

In the meetings in such padas, some individuals would indulge even in verbal abuse and at the same time some others would come to us with tears in their eyes and the unused prescriptions of PHC doctors in their hands. Apart from this negative picture, it was here that we heard more often words of satisfaction and gratitude for some PHC/RH doctors. Their world is indeed full of inner contradictions - satisfaction and dissatisfaction, anger and gratitude - a kind of criticism by users, who just cannot afford to lose whatever is there and yet want more.

Doctors and their prescriptions:

How far are people's grievances about the doctors, their prescriptions and the availability and quality of drugs valid? For, as stated earlier, certain grievances of the people obviously flow from their wrong understanding of the effective and 'strong' medicine. For instance their equating good medicine with injections and capsules, or with administration of saline bottles, or getting several tablets and tonics and so on. However, it should be kept in mind that people learn from what they see, experience and what they are told by the influential persons like doctors. It also comes from what the stratas higher up in the social position are seen to be doing.

On two aspects, we found an almost uniform attitude to the drugs at the PHC/RH by most of the doctors whom we met, had discussion with and had an opportunity to observe them while treating patients. Firstly, all of them believed or felt, most of the time from honest conviction, that there were not sufficient number of drugs available at the PHC/RH and so there was a genuine

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need to give prescriptions for purchasing drugs from outside. Secondly, they expressed doubts about the quality of drugs supplied to the PHC/RH. It is not at all unusual to encounter doctors at the PHC who have no faith in the drugs they are dispensing.

What is more instructive is the ease with which these two opinions of the PHC doctor are communicated to the people and the patients by the doctors themselves!

In this sense, the opinion of doctors and health workers about the PHC/RH drugs is identical with the one expressed by the people. This appears to be quite strange - at least we felt so initially. But it is true. We had expected doctors to be on the defensive about the PHC, about its drugs and about its functioning. But they put up only personal defenses. Most of them defended why they give outside prescription, why they doubt the quality of drugs. Many defended their therapeutic practices. But none consistently defended the drug situation at the PHC. On the contrary, many a times the doctors were quite outspoken about the deficiencies - in personal conversations as well as in front of the people. Therefore, at the PHC, there is almost nobody of some standing who would like to defend the drug situation in a consistent manner, and thereby gradually build up some credibility for its curative services and drugs. Here, more-often-than-not, the administrator of drugs is the biggest discreditor of the drugs available at the PHC/RH.

Irrational Therapeutics : Does this mean that such attitude of doctors flow from the rational understanding of the drug situation at the PHC/RH? The answer is yes as well as no. Yes, because of two reasons. (1) As we will show later, there are insufficient number of drugs supplied to the PHC. Their quantity, especially of those required more often, is also not good. And there are wide gaps in the supply. (2) Some of the drugs supplied are of questionable quality, though this is not true for majority

of drugs and for all PHCs. The doctor is an empirical scientist but the doctor at the PHC- and for that matter many private practitioners - are unscientifically empirical. That is why doctors' contention about the low quality of drugs at the PHC is always presented as vague personal experience. However, one must grant some validity to this contention as : a) subjective experience of patients and doctors coincide very often on this issue b) well known instances of corruption involved in purchase of drugs c) the way drugs not needed are imposed on the PHC, again showing some vested interest of the purchaser and d) it is admitted even by the higher officials in the health department that quality control at the companies operating at the district level is not so stringent.

These two major-deficiencies in the drug supply to the PHC/RH get compounded by doctors' irrational prescription practices and thus their viewing of a real problem from an irrational angle. Our observations at the PHC and RH substantiate this point.

Let us narrate our observations at one RH which has never less than three figure OPD every day, including on Saturday which is half-day. The OPD on the bazaar day at this RH is always around 400 patients. This OPD is normally handled by 4 doctors. Thus, each doctor is indeed a busy practitioner, both in the RH and outside at his/her residence as a private practitioner.

Each of the four doctors had a different style of handling patients, but all of them have a common prescription practice, and that is, to prescribe injections to over 50% of the cases. Only on some exceptional day one would find this proportion of injection-patients less than 50%. Another common feature is that over 50% of them receive outside prescriptions. The RH village is fairly big with several drug shops; making it possible for patients to purchase medicines from the village itself.

The outside prescriptions are mainly of the drugs like :

antibiotics, steroids, syrups and tonics. Further, the outside prescriptions are not noted down in the case papers making it difficult to have any record of the prescriptions and their follow up.

The injections prescribed by the RH doctors were chiefly of : Vit. B-complex, Analgin or Analgin in combination with others, Tetanus Toxoid to almost all injury cases, Tetracycline, and to lesser extent injections of Penicillin and anti-histamines. Another interesting aspect of the injection-prescribing practice is that more-often-than-not, particularly with the injections of Vit. B-complex, Analgin and Tetracycline, sub-therapeutic doses are prescribes. For instance, on any given day, majority prescriptions of Vit. B-complex would be of only 0.5 ml. for adults. Same is true for Analgin and Tetracycline.

When we questioned these doctors about the irrationality and hence waste of such drugs in the form of injections, all of them always admitted that it was not scientific to prescribe injection indiscriminately and in sub-therapeutic doses. But they were not apologetic about it. None of them ever agreed that rational therapeutic was possible at the RH. They thought we were idealist and not able to understand practical way of doing medical practice. They made it very clear that low dose of Vit. B-complex was not given for any therapeutic value, but to satisfy the patient.

"Suppose you don't give injection and give only the medicine actually needed and explain it properly to the patient, won't he/she be satisfied?" we enquired.

"Initially I tried to do so here", prompt came the reply, separately from each doctor, but the content being the same. "But that led to frequent quarrels. They shouted at me, went dissatisfied, sometimes brought some prominent persons to pressurise us or even made complaint against us. So why to have

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such daily zanzat?"

"But just now you prescribed 25 out of 30 injections without patients asking for it. How do you explain it?"

"Well, it is always better to give them injections before they start any dhamal. You know, if you don't give injection they will come back from the dispensary and ask for an explanation. When we have such heavy OPD every day, who has any time to explain every details of prescription to each patient".

They were not totally wrong. We did see patients returning without taking drugs and demanding injections from the doctor. But that was not true for every patient who did not receive injection. Obviously no PHC or RH can give injection to every patient visiting it. A large majority (at this RH a minority of 25 to 40% of cases) does not receive injection on any given OPD day and yet we do not see daily ruckus created at the PHC by the patients. Undoubtedly patients insisting on getting injection are in much much smaller number than it is made out to be by these doctors. Thus, it is not that if injections are rationally prescribed, that is, if their misuse is stopped, there will be a big uproar and demonstration before the RH by the patients or there will be extraordinary demand on doctors' time to explain the prescription to the patient. From our experience we feel that much of the fear of patients' demand is artificially created to justify doctors' irrational practices.

"It is not possible for the government doctors to inculcate this injection culture amongst people" asserted these doctors. "The private practitioners hook people to the miracles of injections and salines".

This justification is too superfluous. Undoubtedly the private practitioners invariable resort to irrational practices to maximise their earnings. Undoubtedly they share significant or

even chief responsibility of promoting injection culture. But that does not mean that the PHC/RH doctors who normally do private practice (irrespective of whether they are officially permitted or not) are any way persuing rational therapeutics. In the PHC/RH set up at least there are certain factors which delimit their irrationalism. These factors are like limited number of tablets/capsules and injections, limited capacity of the patients to buy medicines from outside etc. In their role as private practitioners however, they also resort to limitless irrationalism in order to maximise their earnings.

Thus the situation prevailing is that of limited irrationalism at the PHC/RH and the limitless irrationalism in the private practice. The proportion of therapeutic irrationalism increases with the better functioning PHC and RH, that is, with high OPD attendance.

At one PHC, which is having a non-MBBS doctor in-charge and who spends, in a week, 3 days at the PHC and 4 days at his native village, which is about 20 kms from the PHC village, doing private practice. This doctor was seen several times writing prescription without even looking at the patient. We also saw him mixing up prescription of the child with that of the mother simply because he did not bother to find out on whose case paper he was writing. He constantly complained about the scarcity of drugs and not having a medical store in the PHC village itself. The amount of irrational prescribing, acts of commission and omission in treating patients, his general negligence about work etc. could make a story in itself.

Once he prescribed injection Tetracycline to a child of about 2 years age. One of us was in the dispensary and talking to the compounder. This prescription came to our notice. We told the ANM and the compounder not to give injection and got some other antibiotic prescribed by the doctor. One of us met the doctor and explained to him that Tetracycline was hazardous to the child.

Initially he seemed to listen to us. But as we started doing some other work, he left his chamber, took the child and mother with him to the injection room and gave the injection himself. We saw him doing it but he completely ignored us.

Later on when we questioned him on this point, he said aggressively.

"If Tetracycline is harmful to child, so what? The child needed antibiotics and I had nothing else. The injection is not going to be more harmful than the infection she is having.

On listening to this argument we realised the futility of our efforts to discuss anything about the rational therapeutics with him. And this happened again and again, from PHC after PHC and at the RHs. Beyond a point the discussion on the rational prescribing and therapeutic is usually stonewalled.

Injection abscess : Injection abscesses are not so uncommon. We visited number of villages in our field work lasting about a year. Reporting of injection abscess was a very good indicator of the immunisation and injection-centred curative services reaching the community. We could find this evidence in the majority of villages we visited.

As narrated elsewhere, amongst para-medical workers, private practice is more prevalent in male Health Workers. They use injections quite liberally. In the house of private practicing MPWs we commonly found injections of : Tetracycline, Streptopenicillin, B-complex, Siquil (tri-flu promazine) and Avil (Chlorpheniramine Maleate).

While visiting residences of the private practicing MPWs, we even found injection abscess in their own children. The injection was invariably given by the MPW himself. In one instance, we had visited MPW's house with the Medical Superintendent(MS) of the RH.

The MPW brought his infant son to the MS for examination. He had an abscess on the front part of the thigh. The MS was a bit confused as that is not the site where injection is normally given. But the MPW explained that the child was given third dose of the Triple Vaccine at that site by himself. The MS was really embarrassed. "These people do private practice and we are totally helpless in the matter" said the MS when the MPW went inside his house to bring tea for us, "You can imagine", he continued, "how he must be treating common people when he is so callous in giving injection to his own son".

But such scenes of doctors' and other health workers embarrassment due to the injection abscess are not observed only in the field. The PHC and the RH headquarters exhibit them too and not so infrequently. In one such happening a male aged 30 years approached a doctor during the OPD hours. He had a swollen left upper arm which was extremely tender on touch. He had an injection there about a week or `10 days' back. Being from a distant village he had not approach the doctor immediately after the problem started. But now he had no choice as he was finding it extremely painful to move his hand and even to wear his shirt. He came with a new case paper - the old one was not traceable. Even the doctor did not bother to demand the old case paper. The doctor examined him and arrived at his diagnosis without much difficulty. "Well, you try some medicine that I give. You may get alright with it. If you don't, we will have to put a small cut and take pus out of it". I could see that patient and his relative did not like the idea of a "small operation". The doctor felt offended. He almost exploded, "You all demand injections. Now see what has happened? How many times did I tell you that injections should not be taken when not needed? But you people will never understand".

The patient was in great pain. He had no strength to respond. But his relative was in no mood to oblige the doctor. He believed that it was a fault of the hospital and not the

patient's. He gave back, but with some restrain, "In this place whatever may happen to us for other's fault, ultimately we are blamed". It had come out more as a statement rather than a reply. "How?" The doctor looked up, challengingly, "You should see what kind of needles are used. Better needles are used when animals are given injections. For that, don't blame us".

"What could we do?" the doctor answered. But he changed his tactics, "These are the ones supplied to us by the government. We don't get better needles. And over and above that, you all ask for injections. How could they be kept good in such a situation?' The relative wanted to say something. But he looked at the patient and decided against it.

"You will have to get medicine from outside" said doctor while pushing a prescription towards the patient. But the patient and his relative did not seem to accept the prescription paper. Instead they said that it was unfair to make them pay for medicine when something had gone wrong due to the hospital's fault. When the doctor realised that it was difficult to persuade them to accept his prescription he called the compounder.

"What antibiotics do we have in the OPD?"

"Terramycin"

"What else? Do we have ampicillin?"

"No, Sir. The ward might have some".

"I am asking about the OPD and not ward. You can go" But he remembered something and called him back, "Wait, do we have PP (Penicillin)?"

"Yes, Sir"

"Now, you may go".

The doctor looked at us. He was puzzled. We could understand his problem. He wanted to give oral antibiotic. He was reluctant to use injection penicillin to treat an injection abscess; perhaps worried about the possibility of another abscess.

For about 2-3 minutes he was not able to decide. He went on looking at the abscess and at us - hoping to receive some hint, but that was not forthcoming. Suddenly something came in his mind. He called the attendant and asked her to bring before him two ANMs who were giving injections. Two young women, recently trained to become ANM, came. But before doctor could ask any question to the ANMs, the patients relative, who had also accompanied the patient when he had taken injection, turned to the doctor and said hurriedly.

"None of these two gave injection on that day. Some other nurse had given".

But the doctor ignored what he said. He asked the ANMs, loudly, "See this patient. He has got injection abscess. The injection was given on, who gave it?"

"No we didn't", they said in unison. They had not bothered to look at the abscess. Their eyes were fixed on the face of the patient, apprehensively. They felt very relieved when the patient's relative came to their rescue again and repeated his statement. This also prompted doctor to decide.

"See sister, start injection penicillin", he was already scribbling fast on the case paper. "But be careful. This time boil syringe and needle carefully. Do proper test before you give full injection." then he turned to the patient, "We start injections from today. You will have to come everyday to get injection".

"But we live far away. How can we come everyday? And see his condition, he is not able to lift his hand".

"What else could we do then"?

"Admit him here".

"What about his food? We won't give food when he is admitted here".

The patient's relative agreed to make arrangement for food. The patient was admitted. When they left, the doctor told us, "such things do happen. But compared to so many injections given every day, I am finding occurrence of injection abscess very negligible".

But he knew his statement was unconvincing. But he had no time to argue more. He proceeded to examine another patient and by force of habit, scribbled down an injection again!

There is no scope to narrate many other such instances involving ANMs and MPWs. However, we must emphasize that morbidity due to indiscriminate use of injections in curative practice and due to increasing coverage of immunisation, cannot be ignored. Especially in the areas where the government curative services are better utilised and all types of private practitioners have flourished. One must do a proper study before dismissing this iatrogenic phenomenon as negligible.

Drug Information :

How does a doctor at the PHC obtain information on drugs? For that matter, how does a doctor-turned-administrator, the DHO, who does drug purchasing, obtain drug information? When we raised this point with high-level bureaucrats, most of them were found ready with a well prepared reply.

"You say that PHCs don't get many medicines. That is true. But why should PHC require all medicines given in the text books? The government committee has suggested that the PHC should be supplied with drugs from the list of 65 drugs prepared by it. You see, these drugs are simple ones, any MBBS doctor should know about it. So what extra information do these doctors need?"

"What about the DHO who does purchasing from the market?"

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"Now the DHO does not purchase from the open market at his whims. He has to spend 80% of his budget purchasing drugs from the list of 68 drugs. The government has certain rules about purchasing, too. First priority is given to the government companies and these companies produce a wide range of drugs. When any drug needed is not available with them, the second choice is to purchase from the rate-contract companies appointed by the government. In such case, the price is fixed when the government gives the rate-contract company order of drugs. So there is no possibility of local corruption. Only when these two options are not available, the third option of open market purchasing is allowed. Here also some procedures are to be followed. The DHO has to invite a minimum of three tenders and then choose a supplier. So where is the question of the DHO needing drug information?"

It appears quite simple and smooth when one hears this from a person occupying a senior position. We we were told about the loop-holes too and at the end were told that some amount of corruption is there in every so-called fool-proof system, of course. However, our experience suggest that it is not so simple as it is made out to be. Their opinion on the drug information for doctors and DHOs is, to say the least, very unrealistic.

Firstly, it is not so simple to talk about 65 drugs. The reality is that there is a recommendation of 65 drugs, but there are no 65 formulations for those 65 drugs. The DHO and doctors encounter those 65 drugs in various combinations and forms. They have virtually no information on the rationality of combination drugs. Secondly, there is another simplicism which teaches them that all drugs approved by the drug controller (afterall the drug controller is a government officer) and containing one of the 6 drugs as one ingredient in the formulation can always be purchased. Thirdly, there is no information and tradition about doing comparative pricing of single ingredient and combination drugs. Lastly, the ayurvedic drugs appear to have broader or even unlimited term of reference.

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Thus, in absence of any rational and regular drug information supplied by the official sources, the doctors tend to rely more on private sources. This private source is that of the drug company sent through medical representatives. As regards frequency of visits by the medical representatives (MRs), we divided the PHCs and the RHs into three categories :

(1) Those PHCs which are located in remote areas, or in accessible areas but not having a drug shop in the village or nearby. In such PHCs, the visits by the MRs are rare. Here, if the PHC doctor is doing private practice he picks up literature and sometimes samples from the chemist shop from which he purchases his medicines.

(2) In small PHC villages (say less than 5000 population) with one chemist shop and/or the PHC is located not very far from town, some regular visits by the MRs to PHC doctor is not of unusual occurrence.

(3) The PHCs located in big prosperous villages with one or more chemist shops as well as most of the RHs are regularly visited by MRs. Here there is an added incentive for the MR and the doctor. In some of the PHCs located in big villages, the doctors are not paid non-practicing allowance and hence officially allowed to do private practice. In all RHs, doctors are allowed to do private practice. Thus, the MRs jumping queue of patients in the OPD to get priority time from the doctors is not so uncommon sight in the better functioning RHs. Further, till recently, and now to a lesser extent, the medical superintendent of the RH is permitted to do local purchase of drugs.

We witnessed numerous meetings between the MR and doctors at the RH. The doctors' attitude to the MRs was not found to be very different from that obtaining in the private sector. Samples and gifts are accepted without any constraint. Occasionally doctors were seen making demands of certain medicine and gifts from the MRs.

Further, we met many MRs who are recruited by the drug

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companies from the district and taluka centres. Most of them have rural background. Therefore, culturally they are very close to the background of these doctors. We also met MRs who are related to doctors working at the RHs. This makes it easier for them to build instant rapport with the doctors.

In the encounter between the MRs and the doctors, we found that normally the doctors are passive recipient of information supplied by the industry. It seemed as if doctors don't have any capacity to cross-question the claims made by the industry.

At one place we met an MR who works with a Pune based company. He has many acres of land in the district he works. In addition to his work as MR, he supervises agricultural activities on his land. His village is very near to the village of one of the doctors who also has land. His company makes a food supplement. But it cannot compete with the larger companies. However, he said that in that area the sale was not bad as he was able to push his product well. When the doctor was not asking any question on the food supplement, one of us tried to engage him in discussion. He said he would not like to discuss as he did not know more than what his company had told him. He left a bottle of food supplement, ampicillin syrup and some other medicines.

In another instance, when one MR gifted a purse-cum-diary to one doctor, the doctor not only readily accepted it and thanked him, but also showed other doctors the gift. None of them protested. Instead, we could detect faint streak of jealousy amongst others when they came to know about the company to which that MR belonged.

We also saw some modernised methods of drug selling/promotion used by companies producing ayurvedic medicine. The MRs of such companies are found to be more fluent in English speaking than many promoting allopathic drugs and even doctors. Such MRs deliberately spoke in English while we had found many allopathic

MRs speaking more in Marathi than English. They carry information on glossy promotion material in English for ayurvedic drugs are explained in allopathic terminologies. Undoubtedly the target doctors for such ayurvedic companies are allopathic doctors. And they were found to create very favourable impression amongst doctors. This also explains the increased number of prescriptions of ayurvedic drugs by the allopathic doctors in the public as well as the private sector. Incidentally, we came to know about the availability of ayurvedic injections and capsules from the allopathic doctors at the RH and the MRs visiting them.

Another highly objectionable practice was found prevalent at the PHC and the RH located in prosperous villages with drug stores. The drug stores and the MRs supply prescription pads with the drug store's and the company's name prominently printed on every sheet. On some of such pads even some of the products of the company were also advertised. The doctors in such PHCs/RHs were found using such stationary for giving outside prescription. Most of them justified such practice by saying that usually there is an acute shortage of government supplied stationary including case papers.

Drug Purchasing

It was very difficult to get reliable information on the drug purchasing methods used by the DHO. Our inquiries were stone-walled by telling us the official procedures we have described earlier. We spent many hours in DHOs' offices to observe his working. However, most of the time no discussion about purchase of drugs took place before us. Only on a couple of occasion we could observe one DHO entertaining a few persons from a local drug company and placing order for ayurvedic drugs. Incidentally in that DHO's office an ayurvedic officer is appointed to look after that field. But he was not consulted before placing the order. And the order was for two types of ayurvedic liver tonics!

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Drug Requisition and Indenting

The 65 drugs list has brought some sanity in the availability of certain drugs with the DHO. But the coordination between the drugs needed at the PHC and the drugs with the DHO is extremely limited. We will show later that this list of 65 is not adequate. But more important than that is the methods used for drug requisition and indenting.

At the beginning of each financial year, the drug purchasing decision by the DHO is either an affair restricted to bureaucrats where sometimes marginal participation by a few select medical officers is allowed. Normally all PHC medical officers are not asked to send their requirements for the year. And if asked to do so, their requirements are more-often-than-not ignored. There are some genuine reasons for such attitude from the DHO towards the MOs requisitions. Firstly, our MOs are not trained in rational therapeutics. Their requisitions more often contain unnecessary costly drugs. Secondly, the medical training of the doctors is done at the urban teaching hospitals. The drugs required at the first referral centre are simpler as compared to those required at the tertiary level. But for doctors, the ideal drug set up is that of teaching hospital and hence, their demands include many tertiary drugs. Thirdly, the list of 65 drugs, though inadequate, has not been scientifically explained to doctors and so most of them either don't know about it or if they know, they are not satisfied with it. And lastly, the training in projecting/ estimating quantitative requirement of each essential drug is never given to doctors. There is no system of collecting even preliminary data on the curative services provided. Thus, doctors' requisitions contain wild guesses based on superficial impressions.

Thus, in absence of useful and positive feed back from below, many DHOs have evolved their own methods. Some of them said that every year they asked only few MOs whose PHCs were doing well to

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give information on drug requirement at the PHC. Their recommendations become general guidelines. However, there was no evidence that such guidelines were strictly followed. Some DHOs admitted that such guidelines often remained on papers. In worst cases, no such guidelines/recommendations are asked from the MOs. The DHO with the ADHOs or only one selected ADHO, seemed to estimate needs and do the purchasing.

In short, wide variation exists in estimating drug needs of the PHC from district to district. However, we were repeatedly told that these variations are within the norms set up by the state government. We did not have enough opportunities to investigate this claim in great detail at the district level.

However, we could accompany the PHC and RH staff when they went to the DHO's office to get drugs. At least once in a month when the MOs' meeting at the DHO's office take place, a long list of drugs required by the PHC is prepared and taken to the DHO's office. At that time, normally, very chaotic condition prevail at the district drug store. Since the requisitions are not strictly taken into consideration, whatever is available is supplied. In this situation, the PHCs nearer to the district centre benefit while the ones which are far away lose out. The PHCs nearer to the district centre are able to make more visits in a month than the more distant ones due to constraints of availability of vehicles and limited funds for fuel.

Two main methods are seen to be operating to replenish drugs at the PHC. (1) Making visit at the right time to the DHO's office. This is because availability of drugs and material at the DHO's office is highly irregular. Therefore, if the PHC jeep visits the DHO's office when drugs have arrived, that PHC gets the drug easily on that day. (2) The status of person visiting DHO's office seem to be an important factor. We observed several times that if only an attendant is sent with the indent, more-often he returns with very few drugs or even with drugs not indented. We

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also met some doctors more concerned about drugs and they always made a point about going personally and instructing the storekeeper to get the correct drugs.

There are also some unspoken norms. For instance, though theoretically the DHO is supposed to supply drugs worth Rs. 9000 to each PHC in a year, such equitable distribution never takes place, nor is it feasible. Thus, the status of the PHC in its functioning and achievement, as perceived by the staff at the DHOs's office, establishes in almost all districts, the norm of providing more medicines to some PHCs and less to others. Another unspoken norm is related to the initiative taken by the MO and his relationship with the DHO. Since the DHO is the most powerful person at the district level in the health services, any MO respected by him or in any other way closer to him, gets a better deal from the store-keeper.

Local Purchasing

The PHC MOs have no power to do local purchasing of drugs. The RH medical superintendent's power in this regard has been greatly curtailed now. We were told that he could purchase only drugs worth Rs. 100 from the market at a time. Yet many PHC MOs were found to be doing local purchasing.

The funds for doing such purchasing are raised by the MOs by carefully making savings from the family planning money. We also accompanied MOs several times when they went to do drugs purchasing from such funds. Of course in such purchasing, the norms of type of drugs to be purchased are set up by the respective MO depending on his perceived needs of medicine at the PHC. Since this is a quite informal arrangement, the PHC is not the beneficiary every time. Though bills are shown in the FP account, the drugs are used in the OPD of the PHC and sometimes in the private practice of the MO. In any case we were not so

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adversely impressed by this set up as on many occasion the doctors resorted to this practice to meet some genuine needs of the patients visiting the PHC.

Corruption and malpractices

This undoubtedly is a very sensitive subject. To talk about it without concrete proof may be regarded as slander against health workers and administrators. Such a study cannot reveal concrete proof as that is the domain of the Anti-corruption Bureau, investigative journalists and detectives. We do not profess to belong to any of these categories. Our information is limited to what people within the health services talked to us. In certain cases, we could build some rapport with the local suppliers who dropped a few hints providing us with some verification. We also tried to cross check by making efforts to understand the motivations behind what was being told to us. From all such angles, we can safely say that people did trust us enough to talk very frankly about the corruption in purchasing and use of drugs.

What is very remarkable about our health workers is that almost all of them believe, except a small minority opting to remain neutral, that deep rooted corruption exists in drug purchasing. Everybody claimed that the purchasing authority gets a commission ranging from 10 to 20 percent. Yet, only a tiny fraction of them could give us an eye-witness account of such corruption in purchasing. But even the fact that a few persons could narrate personal experience is very important as normally such corruption is not expected to take place before the eyes of the subordinates.

The health workers described the following likely ways in which corruption takes place or gives suspicion of corruption:

(1) The commonest method described is that of getting commission or cut. This is not only the commonest method, but perhaps other methods are intimately related to this method or the other methods are usually practiced to maximise the benefits in this method. Further, upto the district level, this method appear to operate only when open market local purchasing is resorted to. For the purchases from the government companies and rate contract companies are not supposed to be on the basis of commission. Though the Lentin Commission has discovered corruption even in allotting rate-contracts, that level does not fall in our field and so we were not able to get more information on that

(2) In the open market local purchasing, the purchasing authority does not appear to be the autonomous decision maker. He also seem to come under pressure or seem to be influenced by the local power groups. Thus, we heard some individuals telling the DHO to invite tender from certain company or distributor for purchasing certain drugs and equipments.

(3) The tender system is some check on malpractices, but it is by no means not fool-proof. At one RH, we once saw one company MR conferring for a long time with the MS Next day in the store-room, the compounder reported that he was instructed to locally purchase the drugs of the same company. When we asked him about tenders, he said it was easy as he would invite tenders from other two companies/distributors whose price for these drugs were higher than the one favoured.

(4) In order to justify local open market purchasing, sometimes a situation of emergency or scarcity of certain drugs is deliberately created.

This needs qualification as it was difficult for us to establish whether such situations were more due to deliberate plan or simply due to the inevitable outcome of bureaucratic inefficiency. Perhaps it is both.

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(5) Unrequisitioned excess supply of particular drugs create serious suspicion in the minds of lower level health workers about the malpractices. At one remote PHC with very light daily OPD, the MO was suddenly supplied with several thousand tablets of Dexamethasone which he had never asked for. When he wanted to return them, the DHO's office refused to take back saying there were still too many tablets lying with them.

In one district, where an ex-DHO's house was raided, they found lakhs of rupees in cash. It is said (or alleged) that DHO has built a bungalow in almost each Tehsil of the district. In this district we happened to met one compounder who had worked with him for 3 months on deputation as store keeper. He narrated his personal experiences of the corruption. These were interesting as they clearly bring out the subtle and crude **mechanism** of corruption.

"The store-keeper at the district had left suddenly and so the DHO needed temporary replacement urgently. So I was asked to take charge immediately. I worked there for 3 months.

"On the very first day, late in the evening I was called to the DHO's house with certain books. He was with a person from a pharmaceutical company. The DHO asked me to prepare a requisition / an indent for 10,000 ampules of a drug. I did as required and he signed over it. The order was given to that man and in front of me that man paid him some money in cash. Of course, I was also asked to prepare other papers as per rules with the help of that man.

"But there is nothing new in getting commission. Even at lower level, wherever I have worked, it is always there and I have helped my superiors in the same way. However, this DHO excelled others in another important aspect. He misappropriated drugs on a large scale".

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"But how can DHO misappropriate drugs?" we probed, "The drugs have to be accounted for and if the MOs sign on the receipts as per the stock received how can he maintain accounts".

"Do you think PHC doctors' are saints?" he retorted, "You know very well so many of them do not stay at the head quarters, do illegal private practice in the PHC itself, at home/or in nearby town. You see they have their faults and so weaknesses. If the DHO and storekeeper properly organise, these weaknesses could be easily exploited.

"The method employed was simple. When the doctors used to come to get medicine, the store keeper takes him aside and asks where were you on so and so date? The DHO had come to your PHC. He was very angry. The weak MO would breakdown. Once this weakness is known, the store keeper would say, 'I got some 50 broken vials of this injection. I will have accounting problem. You do me a favour, sign for receipt of 100 vials but I will give you only 50. And don't worry I will protect you from the DHO'. This tactics worked with some. Others were properly threatened and harassed. So many of them participated in this racket.

"I couldn't stomach this method. Indeed I was scared that it was too open and won't last long. So I got my deputation cancelled after 3 months. The person who came to occupy my place was different. He got his share in this racket and earned lot of money. It is said that in the raid they found a colour TV which was a gift given by that store-keeper to the DHO.

"He is caught now. He will pay for his misdeeds. He acted too smart. But others are not so reckless as that man".

Store-rooms and Compounders

Management of the drugs store room is very crucial work. The person in charge must know how to arrange various medicines so

that their retrieval is easy and accounting efficient. The knowledge about the stock of medicine is important for replenishing drugs used. It also gives idea about the status of the essential drugs and life saving drugs.

This important task is however often reduced to only administrative procedures. If it is perceived as a technical task, this work should always be entrusted to compounders. It is unfortunate that in some districts, at the PHC level, the task in delegated to the clerk while the compounder looks after only OPD drugs. In such PHCs we had real difficulty in getting relevant data on the drug supply and their use because the clerks did not understand what was expected from them.

The use of brand drugs takes its toll in the store management too. We were elated whenever we saw a fat register showing record of so many drugs at the PHC. However, after the records were supplied to us, we realised that a number of drugs running over 50 100 or even 150 were actually only 10, 20 or 40. The inflated number was due to branded products. For instance, Analgin (a drug which has no business to be at the PHC) was available under 4-5 single ingredient brands and an equal number in combination with others. Such inflated number of drugs were seen more pronounced when clerks were managing the store. Whenever the store was under the compounder, we could see evidences of attempt made by them to combine under one head some single ingredient brand products. However, this attempt was successful in as much as the uniformity in dosage allowed by the companies. Such attempts were found normally to be ineffective with the combination drugs except for the rationally permitted combinations.

The branded products not only make it necessary for doctors to remember many unnecessary names but also forces the compounder to do the same. He is also required to be extra careful in arranging medicines in such a way that retrieval of branded product is not missed out. At the RH we also saw double authority

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of the DHO and Civil Surgeon creating confusion for the compounder in selecting the method for arranging drugs. At one RH in our presence, the DHO on his visit inspected the store room. He asked the compounder to arrange all drugs according to the format i.e. tablets, capsules, injections, syrups, mixtures etc. Each format was to be kept separate - no mixing up permitted. The compounder worked overtime to implement the instruction. After couple of days, the civil surgeon also made his visit. He was angry to see the method of arranging drugs. Despite protests, he made it clear that all drugs, irrespective of format should be arranged in alphabetic order.

The Compounder

The very name Compounder brings the vision of drugs and mixtures. The compounder and drugs are inseparable. Over the years as the forms of drugs have changed, the nature of work performed by compounders has also changed. No longer exists the compounder of older times who used to be the essential assistant to the doctor.

The Compounder at the PHC perform two extreme roles. The role at the one extreme is official. It involves all kind of drug management, accounting, indenting, arranging etc. and the dispensing of drugs. The role at another extreme is that of a substitute doctor. The compounder acquired this role due to the doctors' default. At many PHCs, as is well known, the doctors do not stay at head quarters and are very irregular in attending work at the PHC. In the OPD, next to the doctor the most important persons for curative work are the compounder and nurse.

Thus the role of the compounder is transformed or is transforming, but in two contradictory ways. On the one hand he is losing all traditional skills of compounding drugs and mixtures as the drug companies have taken over those function. The

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compounders now do not prepare even the simplest mixture at the PHC and the RH. Everything is purchased ready to dispense. This deskilling of traditional functions is accompanied by on the other hand, unintentional increase in his occasional curative functions. In any case, traditionally many compounders have, after some experience, transformed themselves into practising doctors'. The only difference is that at the PHCs now this role is acquired by them without proper education under the watchful eyes of a cooperative doctor.

The senior compounders are not happy about their changed role. Many of them expressed their profound distress at the deteriorating quality of the mixtures made by the companies, and their high prices. We report here our discussion with one such compounder who is very articulate and brought the relevant issues mentioned by others into sharper focus.

"As a compounder I know the reasons why the quality of the ready made mixtures have deteriorated and prices increased. Mixtures are purchased from drug companies and normally available at PHCs in 5 litre plastic jars. Their quality is such that neither doctor nor patient and least the compounder have any faith in their effect. Compare these mixtures with the ones we used to make in our times. We were making them ourselves, using necessary ingredients in adequate quantity. The patients therefore used to believe in them because they were really effective.

"I don't understand why at the hospital level such mixtures are not made by the compounder. We oldies know how to make them. The new compounders, I am sure, must have been taught about it but forget fast as they have never made mixtures on a regular basis. Only some years back I used to make mixtures at the civil hospital.

"I don't say that we revert back to the system of preparing a particular mixture separately for each patient, as was done many

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years back. However, atleast, we stop purchasing the substandard bulk mixtures from companies which are more interested in making syrups.

"Making mixtures at the PHC/RH by the compounders would save considerable sum of money. Take an example of Carminative mixture. A 5 litre jar of this mixture costs about Rs.72.50. Now let us see what will be the cost if we make it ourselves. For making 50 litres of Carminative mixture, the total value of all ingredients needed is about Rs.50/- And our labour is always there whether we make mixture or not. So in effect, in Rs.50/- we make 50 litres of mixture which is available in the market at the rate of Rs.72.50 for 5 litres, that is about 15 times more".

During our study at no time did any doctor ever make a mention of the pharmacopoeia. To the majority of them it had never occurred that the PHC and the RH should have their pharmacopoeia. They even did not know about it when they were student and working at the teaching hospital. They felt that it was more useful to remember names of brand drugs than the requirements given in the pharmacopoeia. However, a couple of compounders did mention about the need to have pharmacopoeia. But most of them were very cynical about it:

"I had one pharmacopoeia, very old one, but I lost it. In any case, who uses it now? I haven't seen any new pharmacopoeia. The government does not supply one to the staff involved in the drugs management. The doctors never even think about having their own pharmacopoeia for the PHC or the RH. How many of them understand the meaning of pharmacopoeia? Everything is available readymade and it is company's "pharmacopoeia" which has more weight".

A Vicious Circle

Inadequacy of funds for drugs was mentioned by all officials. Some DHOs were very bitter about it. It was very difficult to persuade them to discuss details of purchasing and other related matters as they used to take offense saying, "Can you cater to demands of patients coming from 30,000 population with a meagre budget of Rs.9000 per year?" One even went to the extent of saying that, "Given the perennial shortage of drugs and inadequate funds, sometimes we deliberately do not push PHC doctors to be very efficient in clinical work. You know, in that case he will demand more medicine as the number of patients attending OPD increases".

We also witnessed a few minor altercations between the DHO and the doctor on this issue. This is because some doctors have made a habit of telling visiting DHO and ADHO who advise them to improve OPD attendance, that unless more drugs are provided he could not look after patients properly. This usually makes the DHO angry resulting in minor altercations.

Some DHOs have pragmatically come to a conclusion that given such a low drug budget, it is better to allow the PHC doctor do private practice. This way, at least in those areas where there are not many private practitioners and no drug store, the patients get some medical care. This is one more reason why the higher officials were found ignoring and sometimes even encouraging the private practice by the doctor.

One DHO, in an expansive mood while discussing many issues at length, narrated his dilemmas and problems regarding drugs. He covered almost all points- from the budget to the private practice. We hereby reproduce some parts of his narration to highlight some frank opinions of his as well as similar opinions of other officials.

"Shortage of drugs at the PHC is not new. The budget is only of Rs.15,000. Out of that Rs.6,000 are kept at Bombay. They purchase drugs from that amount and directly send them to the PHC. They send only 12 to 15 drugs. Thus, for each item they can spend on the average about Rs.500. That is good. But here I get only Rs.9000 for a PHC and the PHC doctor usually requisitions at least 150 items. I am required to provide enough stock of these 150 items for one full year. So how is it possible to do?

"So I gather some MOs. Ask them to prioritise items. Even if I accept 90 items, I have only Rs.100/- per item. Is it sufficient to buy supply of one drug for a year? These MOs ask for Ampicillin. It costs more than a rupee per capsule. What is the use of sending only 100 capsules? That would treat only 5 patients in a year. Therefore, at our level, the drug shortage is perennial. The MOs will continue to complain about it. Still I manage to divert some funds from other accounts to buy medicines. If you make real calculation, you will find that we give more drugs to the PHC than the budget allows.

"It is true that some PHCs where the OPD is heavy, get more medicines. But we try to minimise such discrepancy.

"For purchasing drugs we follow regulations. There are government companies and rate contract companies. They get priority. The rate contract is given at the ministerial level. Only if drugs are not available from those two sources, we are allowed to purchase from the market. Here too we have to invite at least 3 quotations. The order goes to the one quoting the minimum price. Let me tell you, sometimes we get quotations so cheap that such amount could not even cover the raw material and part of other costs. So you can imagine the quality of drugs supplied. What do we do in such cases? We are supposed to buy the cheapest drugs from the market.

"Here again comes my point about allowing private practice.

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(He is a strong supporter of allowing the PHC doctor to do private practice) I know in many PHC villages in my district there is no drug store. I cannot supply enough medicines to the PHC. But patients have to be treated. If the doctor is officially allowed to do private practice, he will at least keep drugs at his home. That means patients are treated. If they have to pay, so what? They do pay to the private practitioners, so why not to PHC doctor? And in any case most of the PHC doctor do keep their own medicine and practice. What else can they do when there are no medicines at the PHC and or the PHC medicines don't give results?"

Thus a vicious circle is created. There is shortage of drugs. As a medical person the PHC doctor can not sit idle and asks patients to go untreated. So he keeps private medicines and do private practice. The private practice creates a vested interest that consciously or unconsciously prompts doctor to continuously undermine the credibility of PHC medicines and makes him negligent about demanding more medicines. He also resorts to irrational prescription practices to maximise his gains. He develops vested interest in such irrational therapeutics. Thus he forgets the value of simple and rational medicines and does not consider them a real supply of medicine.

It is interesting to note that all these levels are logically connected and feed each other. A private practicing doctor is a vulnerable doctor. He can not stand up before the higher ups and fight for the medicines he requires. Further, it is possible to break this vicious circle from any level. But the solution is not at one level as each level is closely connected to others.

Drug Budget

It is a very difficult task to calculate the actual drug

budget of the PHC. Every health programme has its own supply of drugs. For instance, for sterilisation, for each vasectomy and tubectomy done, the PHC gets a fixed amount of drugs. Similarly drugs are supplied as a part of the malaria, filaria, tuberculosis, leprosy, blindness control, MCH, immunisation (vaccines), guinea worm and other control programmes. For over a year, the drugs supplied to the VHGs of Rs.50 per month have been stopped. In the disease control programmes and in MCH, immunisation and family planning, the drug supply is connected to the performance. Thus, a wide variation in supply according to the reported performance of the PHCs is observed.

In addition to the above, for routine use or say for curative purposes in the OPD, drugs are supplied to the PHC and the sub-centre.

The allocation per PHC is of Rs.15,000 worth of drugs. However, the full amount is not transferred to the DHO's office. The DHO gets Rs.9000 per PHC for the district as the total drug budget. The remaining budget of Rs.6000 is kept at the Directorate of Health Services. The Directorate makes purchase of drugs and sends a parcel to all PHCs once in a year.

The DHO is empowered to spend the drugs budget given to him in the financial year. He is also required to spend 80% of his budget for the medicines listed in "the standard List of Drugs to be Purchased for PHCs and sub-centres".

The sub-centres are given drugs worth Rs.250 per month, i.e. Rs.3000 per annum. If we take the average number of sub-centres under the PHC as six, the sub-centres get the drugs of Rs.18000 per year.

All health workers - from paramedics at the sub-centre to the doctors at the PHC and even the DHOs without any exception, bitterly complained about inadequacy of the drug budget. How far

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is this complaint objectively correct? Let us compare the drug budget with the work expected from the PHC.

To put is simply, the PHC and the sub-centres under it are supplied drugs worth Rs.33000 for the population (average in our sample) of 30,000. That is, for routine curative work the PHC is supplied drugs of Rs.1.1 per capita. Even if we add into this the curative drugs supplied as a part of disease control programme, the figure would not be substantially higher.

Even this figure does not give correct picture of the reality for several reasons. Firstly, there is no rule and mechanism that ensure that each PHC would get at least drugs worth Rs.9000 from the DHO's office. There is considerable unequal distribution determined by many factors like the performance of the PHC in the priority programmes, the initiative taken by the doctor in procuring drugs from the DHO's office, the professional and personal relationship between the DHO and the doctor and so on. Secondly, the Rs.15,000 worth of drugs at the PHC is mostly utilised by the people living within 5 km. radius around the PHC headquarters. The PHC is not easily accessible to people living beyond that distance and such people do not use PHC for routine curative care on regular basis. And thirdly, the need of drugs at the PHC headquarter usually eats into the drug supply for the sub-centre despite administrative rules framed to prevent such practices.

Thus, the meagre supply of drugs of Rs.1.1 per capita is very unequally distributed within the PHC population and also across the PHCs.

From the above it appears that the per capita supply of drugs may not be a correct way of analysing the drug situation. Let us analyse it in terms of average amount of drugs available per patient per visit at the PHC.

In our sample (excluding RHs), the average OPD attendance of the PHC was about 18000 patients in a year. Given an average drug budget of the PHC of Rs.15,000 per year, each patient on an average gets drugs worth Rs. 1.2 per visit. If we assume that each patient is given drugs, on the average, for three days per visit, the drugs available per patient per visit comes to Rs.0.40. That is, to put it simply, each patient at the PHC gets drugs worth 40 paise for one day's treatment. And this holds true only if the PHC gets its full share of drug supply from the DHO and the Directorate.

This amount is totally inadequate for treating patients even at the first level referral centre. Undoubtedly the drug budget of the PHC must be substantially enhanced. What is the actual amount of drugs required at the PHC? This question is difficult to answer given the limitation of the study. The reply depends on three factors:
One, the average number of patients treated currently at the PHC and the likely increase in the utilisation when drug supply is augmented.
Two, the diseases for which the PHC is currently approached and whether there would be any addition when more drugs are supplied.
And
Three, the saving that would be affected if the drug purchase is rationalised only generic drugs are purchased, irrational combinations omitted etc. It is not possible to do any reasonable estimation on all three factors from this study. However, a small exercise carried out by us by using the data on the types of drugs supplied to the PHC could given a broad indication of the picture of the third factor.

SOME FINDINGS FROM THE DRUGS SUPPLIED TO THE PHCs FROM APRIL 1, 1986 TO MARCH 31, 1987.

We collected data from all PHCs (12) and RHs (3) in our sample regarding drugs supplied to them in the calendar year 1986-87. However, the data made available from two PHCs are too disorganised and inadequate for use in our analysis, and therefore, the drugs supplied to those two PHCs are excluded from our analysis.

As stated earlier, the principal method used in this study is a qualitative case study method. The quantitative or statistical method is used in a limited way and only to supplement the qualitative analysis. Thus, in the limited time available for the study, it was not possible to collect quantitative data on all aspects of drugs. Therefore we have focussed here only on three aspects : (1) All drugs available in three forms, viz. Tablets, Capsules and Injections. This was because we found that the drugs supplied in the forms of syrup, mixtures, powders, ointments etc. and other supplies like dressing material etc. were difficult to account for in the time at our disposal. Therefore we excluded them from our analysis. However, we believe that the data on tablets, capsules and injection is sufficient to give us a broad picture of the drug situation at the PHC. (2) We are using only the number of drugs supplied to / available at the PHC for our analysis. That is, the data on the quantity of each drug at the PHC is not used. This is a serious handicap. But standardising units of quantity of drugs, their costs etc, though possible is a very time consuming task and could be done only as a separate exercise (3) We have analysed data on the drugs supplied/used only for the routine curative work. The drugs supplied separately for the national programmes are excluded. That is drugs like Rifampicin, Thiacetason etc. used for TB; Dapson for leprosy; Vit.A for Blindness control programme; Chloroquine, quinine, etc. for malaria control programme; Ferrous sulphate, folic acid etc.

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for the MCH; all vaccines for immunisation programme; and so on are excluded. This had to be done because the data supplied by the PHCs are not adequate and consistent for the drugs used in those programmes.

Lastly; to better appreciate the drug situation at the PHC we needed some ideal lists of drugs essential for treatment of patients at the first referral level or secondary level in primary health care. We have used two lists. First is the list prepared by the Government. It is called "Revised Standard List of Drugs to be Purchased for PHCs and sub-centres (the Government List)". It is issued by the Director of Health Services, Bombay, by her circular dated July 22, 1987. The circular recommends that 80% of the PHC drug budget should be used to purchase drugs mentioned in this list. The second list used for comparison is the one prepared by the International Consultation on Rational Selection of Drugs, prepared in 1986 (ICRSD List). This consultation was organised by the Voluntary Health Association of India, New Delhi and it is an Indianised version of the list of essential drugs for the secondary level of medical care prepared by the World Health Organisation. We have used this list because we believe that this is the most comprehensive list prepared by the voluntary agencies committed to Primary Health Care.

In order to make these two lists comparable with our data, we have trimmed them by excluding (1) all the forms of drugs other than tablets, capsules and injections. (2) drugs used in national programmes.

The Government and the ICRSD Lists

The **Government list** contains the following drugs :

Injections :
1. Inj. Coramin (Nikethamide)
2. Inj. Adrenaline
3. Inj. Dexamethazone
4. Inj. Atropine Sulphate
5. Inj. Hydr. Ethyl Theophylline
6. Inj. Promethazine
7. Inj. Triflupromazine (HCL)
8. Inj. Phenobarbitone Sodium
9. Inj. Antispasmodic
10. Inj. Methargine
11. Inj. Oxytocine/Syntocinone
12. Inj. Fort. Benzathine Penicillin
13. Inj. Benzyl Penicillin
14. Inj. Oxytetracycline
15. Inj. Emetine Hydrochloride
16. Inj. B.Complex

Tabs. & Capsules :
1. Tab. Prednisolone
2. Tab. Antihistaminic
3. Tab. Hydr. Ethyl Theophylline
4. Tab. Methargin
5. Tab. Belladona
6. Tab. Antacid (Mg.Trisilicate+Al.hydroxide)
7. Tab. Bisacodyl
8. Tab. Penicillin
9. Tab. Sulpha Mexazole
10. Tab. Sulfameth + Trimethoprin
11. Tab. Furazolidon
12. Tab. Metronidazole
13. Tab. Mebendazole
14. Tab. Aspirin
15. Tab. Paracetamol

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16. Tab. Oxyphen Butazone
17. Tab. Vit. C
18. Tab. B.Complex
19. Cap. Poly Vitamin
20. Cap. Ampicillin
21. Cap. Tetracyclin
22. Cap. Chloramphenicol.

Total no. of injections, tablets and capsules : 38.

The ICRSD list contains the following drugs :

Injections :
1. Inj. Aminophyllin
2. Inj. Ampicillin
3. Inj. Atropine
4. Inj. Benzathine Benzyl Penicillin
5. Inj. Benzyl Penicillin
6. Inj. Chlorpromazine
7. Inj. Dexamethazone
6. Inj. Diazepam
9. Inj. Hydroxy cobalamine
10. Inj. Hyoscine butyl-bromide
11. Inj. Insulin (soluble)
12. Inj. Insulin (intermediate acting)
13. Inj. Lidocaine
14. Inj. Oxytocin
15. Inj. Pethidine
16. Inj. Phenytoin
17. Inj. Epinephrine (adrenaline)
18. Inj. Ergometrine maleate
19. Inj. Erythromycin
20. Inj. Frusemide
21. Inj. Glucose
22. Inj. Glucose with Sod. chloride
23. Inj. Pot. Chloride

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24. Inj. Procaine Benzyl Penicillin
25. Inj. Promethazine
26. Inj. Propranolol
27. Inj. Salbutamol
28. Inj. Sod. Bicarbonate
29. Inj. Sod. Chloride

Tab. & Capsules :

1. Tab. Al.Hydrox.+Mg. Hydroxide
2. Tab. Aspirin
3. Tab. Charcoal activated
4. Tab. Chlorpheniramine meleate
5. Tab. Mebendazole
6. Tab. Paracetamol
7. Tab. Phenoxymethyl Penicillin
8. Tab. Vit. C
9. Tab. Aminophyllin
10. Cap. Ampicillin
11. Cap. Chloramphenicol
12. Tab. Chlorpromazine
13. Tab. Codeine
14. Tab. Cimetidine
15. Tab. Dexamethazone
16. Tab. Diazepam
17. Tab. Hyoscine butyl-bromide
18. Tab. Ibuprofen
19. Tab. Indomethacine
20. Tab. Isosorbide dinitrate
21. Tab. Metronidazole
22. Tab. Neostigmine
23. Tab. Nicotinamide
24. Tab. Phenytoin
25. Tab. Digoxin
26. Tab. Ergotamine
27. Tab. Ergometrine
28. Tab. Erythromycin
29. Tab. Frusemide

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30. Tab. Glibenclamide
31. Tab. Glyceryl trinitrate
32. Tab. Griseofulvin
33. Tab. Hydrochlorothiazide
34. Tab. Phenobarbitan
35. Tab. Pot. Iodide
36. Tab. Prednisolone
37. Tab. Promethazine
38. Tab. Pyridoxine
39. Tab. Propranolol
40. Tab. Riboflavin
41. Tab. Salbutamol
42. Tab. Senna
43. Tab. Sulfamethoxazole + Trimethoprim
44. Cap. Tetracycline
45. Tab. Thiamine
46. Tab. Vit. B.Complex (without B 12)
47. Tab. Vit. K
48. Tab. Nystatin
49. Tab. Reserpine

Total no. of injections, tablets and capsules : 78

Comments on the Government List

As stated earlier, we believe that the ICRSD list is more comprehensive as compared to the Government list. For the ICRSD list has drugs to treat most of medical problems which are likely to be encountered by a graduate allopathic doctor at the PHC. The ICRSD list also does not allow for any possibility of purchasing irrational combination (there are only three combination drugs, namely, Tab.sulfamethoxazole + Trimethoprim, Tab. Antacid and Inj. Glucose + Sod. Chloride - all rational combinations), the cheaper substitutes of costly drugs are kept and all hazardous and bannable drugs are excluded. The government list, on the other hand, is defective on many counts :

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(1) If we take just the numbers into consideration, the government list has less than half of the number of drugs included in the ICRSD list as essential for the second level medical care (2) The essential drugs needed to tackle some important diseases which can be treated by a qualified allopathic doctor in the PHC set up are missing. We can name many diseases, but to illustrate our point, we mention only a few : there is no drug included in the government list for treating - Epilepsy, fungal infection (for systemic treatment), migraine, angina pectoris, cardiac arrhythmia, hypertension, diabetes etc. (3) There is no clear - cut guideline to purchase only single ingredient drugs except the rational combinations specified (4) Certain vagueness in naming right drug keeps room open to accommodate irrational combinations for instance, Inj. Antispasmodic and Tab. Antihistaminic are very vague. The Inj. Antispasmodic keeps room open for branded combinations like Baralgan. Instead, the antispasmodic should be more specific, like Inj. Hyocine butyl-bromide (5) Some irrational and even hazardous (bannable) drugs are also listed. e.g. Tab. Oxyphenbutazone (6) Inj. Emetine Hydrochloride is quite toxic drug and it is difficult to imagine the doctor using it without proper hospital facility (7) It is doubtful whether Inj. Coramin is an essential drug (8) Tab. B.Complex should be without vit. B.12. Instead of capsule Polyvitamin, separate tablet for each essential vitamin should be listed.

Number of drugs supplied in a year

In the year 1986-87, the mean number of drugs supplied to the PHCs/RHs in our sample was 29.6 (± 13.5) tablets and capsules and 18.6 (± 8.7) injections. We have arrived at these numbers by converting all single ingredient and combination branded drugs to the generic single ingredient and combination drugs.

Though the mean numbers appear very impressive when compared with the numbers in the Government List (the mean number exceeds

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the numbers in Government List of 16 injections and 22 tablets and capsules), they are not so satisfactory when compared with the numbers in the ICRSD list (29 injections and 49 tablets).

The standard deviations in both mean numbers, i.e. the variation in number of drugs supplied to the PHCs/RHs is very high. The table 1 shows that 15.4% of the PHC/RHs receive 10 or

Table 1 : Number of drugs supplied to PHCs and RHs in the year 1986-87

Number of Drugs	Number of PHCs and RHs (n=13)	
	Tabs and Capsules	Injections
Upto 10	2(15.4)	4(30.8)
11 to 20	0 -	3(23)
21 to 30	6(46.2)	5(38.5)
31 to 40	2(15.4)	1(7.7)
41 and above	3(23)	0
Total	13(100)	13(100)
Mean	29.6(±13.5)	18.6(±8.7)

less number of drugs (tablets and capsules). These are truly neglected PHCs. Further, 46.2% of the PHCs/RHs receive 21 to 3 drugs, that is equivalent to the mean number or less. Only 38.4 PHCs receive drugs in number more than the mean. The favoured o better furnished PHCs in terms of number of drugs are 3 or 23% o the total. The variation in supply of injections is mor "balanced" in the sense that about 31% receive 10 or less whil about 46% receive above average number of injections.

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Proportion of single ingredient, combination and composition not Identified drugs

Simple numbers do not give full picture of the drug situation at the PHCs/RHs. For a very significant number of drugs, we could not identify the generic composition even after scanning through the Indian Pharmaceutical Guide, 1985. Of the 29.6 mean number of drugs (tablets and capsules) supplied to the PHCs/RHs, we could not identify generic composition of 6.7, i.e. 22.7%, whereas the corresponding number for injections is 2.2 from 18.6, or 11.7%. In addition, 6 tablets and capsules (20%) and 3 injections (15.3%) are combination drugs. Assuming that the generic composition not known drugs are likely to be combination drugs, we can state that about 43% of tablets and capsules, and 27% of injections available at the PHCs/RH are combination drugs. Since the ICRSD list allows only 3 rational combination drugs in tablet, capsule and injection forms, it can be said that most of these combination drugs found at the PHC/RH are irrational combinations, therefore unnecessarily increasing the cost of drugs.

The Table 2, gives the proportion of combination, single gradient and the composition not known drugs at the PHCs/RHs.

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Table 2 : Proportion of single Ingredient, combination and composition not identifie drugs.

Proportions in % ages	Number of PHCs and RHs (n=13)					
	Tablets & Capsules			Injection		
	Single Ingredient	Combination	Comp. not Identified	Single Ingradient	Combination	Comp. not Identified
Upto 10%	-	-	5(38.6)	-	2(15.4)	8(61.6)
>10 to 20%	-	9(69.2)	3(23)	-	8(61.6)	3(23)
>20 to 30%	-	2(15.4)	2(15.4)	1(7.7)	2(15.4)	1(7.7)
>30 to 50%	4(30.8)	2(15.4)	3(23)	1(7.7)	-	1(7.7)
>50 to 70%	6(46.2)	-	-	3(23)	1(7.7)	-
>70 to 80%	3(23)	-	-	4(30.8)	-	-
>80 to 90%	-	-	-	3(23)	-	-
>90 to 100%	-	-	-	1(7.7)	-	-
Total	13(100)	13(100)	13(100)	13(100)	13(100)	13(100)
Mean No.	17 (±6.6)	6 (±7.2)	6.7 (±7.1)	13.6 (±7.1)	3 (±1.2)	2.2 (±2.6)
Proportion of Total	57.7%	20%	22.7%	73	15.3%	11.7

The table shows that 30.8% of PHCs/RHs have 50% or les number of single ingredient tablets and capsules. Similarly mor than 20% to upto 50% of combination and composition not know tablets and capsules are found in 30.8% and 38.4% of PHCs/RH respectively. Evidently the situation as regards injection appears to be much better.

Rationality classification of drugs supplied to PHCs and RHs

For better appreciation of the drug situation at PHCs/RHs i is necessary to know the proportion of truly useful and rationa drugs. Availability of many irrational and hazardous drugs doe

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not add to the effectiveness of PHCs/RHs. It only adds to the cost of treatment and produces adverse effects in the patients receiving it. To classify drugs supplied to PHCs/RHs, we have used the rationality criteria and classification evolved by the ICRSD using the WHO criteria and classification as the base. Accordingly the drugs are classified as follows :

1. Rational Drugs : Rational drugs are those with a demonstrated clinical efficacy and with a favourable benefit/risk ratio for defined situations and indications and recommended for use in most standard medical text books.

2. Essential Drugs : Essential Drugs are minimum number of rational drugs and dosage forms necessary to cover preventive, symptomatic and curative health needs of the population. They should be available at all times, in adequate quantity to the people at all levels. Here we have taken minimum number of rational drugs necessary at secondary level of medical care. The list of such minimum rational drugs prepared by the ICRSD is taken as reference.

3. Irrational Drugs : Irrational Drugs are drugs or pharmaceuticals of unproven efficacy and safety and/or hazardous drugs. These may be single compounds or fixed dose combinations. A combination of two or more than two rational drugs may become irrational formulation, except for a few recognised specific combination drugs.

4. Useless Drugs : Useless drugs are the drugs and pharmaceuticals of unproven efficacy in relation to the purpose (indication) claimed, whenever adequate documentation demonstrating their clinical efficacy is missing or is inadequate. Such drugs are also irrational.

5. Hazardous Drugs : Hazardous drugs are those with a clearly high and unfavourable benefit/risk ratio and which under any circumstances, and in the presence of safer and equally

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effective alternatives available, should not be allowed to be marketed at all. Naturally, all hazardous drugs are also irrational.

The Table 3 gives the rationality classification of drugs supplied to PHCs/RHs :

Table 3 : Rationality Classification of drugs supplied to PHCs and RHs in a year.

Rationality Classes of Drugs	Tablets and Capsules		Injections	
	Mean no. of drugs in the class at the PHC/RH	Total no. in the class as % age of total drugs	Mean no. of drugs in the class at the PHC/RH	Total no. in the class as % age of total drugs
- Essential	13.3(±5)	45	12.3(±5.6)	66
- Rational	3.2(±1.2)	11	1.7(±1.7)	9
- Irrational and Useless	3.7(±1.6)	12.4	1.4(±0.9)	7.5
- Irrational and Hazardous	2.7(±1.6)	9	1.9(±1)	5.8
- Composition not Identified	6.7(±7.2)	22.6	2.2(±2.6)	11.7
Total	29.6(±13.5)	100	18.6(±8.7)	100

The table shows that only 45% of tablets and capsules and 66% of injections supplied to the PHCs are essential, that is, they are included in the essential drug list of the ICRSD. 11% of tablets and capsules, and 9% of injections, though not essential are rational. That is 56% of tablets/capsules and 75% of injections supplied to PHCs/RHs are rational drugs.

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The proportion of irrational/useless and irrational/hazardous tablets and capsules is 12.4% and 9% respectively. The corresponding figures for injections are 7.5% and 5.8% respectively. The table shows that the proportion of composition not known drugs is very high. If we assume that most of those drugs would be irrational, we find that total proportion of irrational drugs at PHCs/RHs is 44% for tablets/capsules and 25% for injections. Undoubtedly this is a very high proportion and retracts from the efficiency in treating disease and also adds to the cost. What is even more deplorable is that such a significant proportion of these are hazardous drugs.

What is the most important factor contributing to such high proportion of irrational drugs at PHCs/RHs? The Table 4 identifies that factor.

Table 4 : Proportion of Rational drugs :

Proportion of Rational Drugs in % ages.	Number of PHCs and RHs (n=13)							
	Tablets and Capsules				Injection			
	Single Ingredient	Combination	Total of single Ingredient and combinations	Grand Total	Single Ingredient	Combination	Total of single Ingredient and combination	Grand Total
Upto 20%	-	2(15.4)	-	-	-	-	-	-
>20 to 40%	-	3(23)	-	1(7.7)	-	5(41.6)	-	-
>40 to 60%	1(7.7)	7(54)	1(7.7)	7(54)	-	3(25)	-	2(15.4)
>60 to 80%	4(30.8)	1(7.7)	10(77)	4(30.8)	2(15.4)	2(16.7)	4(30.8)	8(61.6)
>80 to 90%	5(38.6)	-	2(15.4)	1(7.7)	2(15.4)	-	6(46.2)	2(15.4)
>90 to 100%	3(23)	-	-	-	9(69.2)	2(16.7)	3(23)	1(7.7)
Total	13	13	13	13	13	12*	13	13
Mean number of rational drugs in each category	14(±5.4)	2.5(±1.4)	16.5(±5.9)	16.5(±5.9)	12.6(±6.7)	1.4(±0.7)	14(±6.8)	14(±6.8)
Mean of the Total Drugs in each category	17.1(±6.6)	5.9(±2.4)	22.9(±8.1)	29.6(±13.5)	13.6(±7.1)	2.9(±1.2)	16.5(±7.6)	18.6(±8.7)
Rational Drugs as % age of total drugs in each category	82.4%	42%	72.2%	55.8%	92.7%	48.7%	85%	75.2%

* In one PHC no combination drugs injections made available.

The table shows that only 42% of the combinat tablets/capsules supplied to the PHCs/RHs are rational. corresponding figure for injections is 48.7%. That is, th fifth of tablets/capsules and half of injections supplied combination drugs are irrational!

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The table also shows that the proportion of rational drugs in the single ingredient drugs is highly impressive. The figure is 82.4% for tablets/capsules and 92.7% for injections. Undoubtedly a simple measure of banning all irrational combinations at the PHC will significantly increase the proportion of rational drugs at PHCs and may also make it possible to supply more quantity of essential drugs within available budget.

Availability/supply of Essential Drugs :

The table 5 gives the availability/supply of essential drugs given in the ICRSD list at the PHCs in our sample:

Table 5 : Availability/supply of essential drugs at the PHC/RH sometime or always in the period April 1,1986 to March 31,1987.

Number of PHC/RH at which the drug available	Name of the Essential Drugs	
	Tablets and Capsules	Injections
Nil (i.e. drugs not available at any PHC/Rh in the sample any time in the year)	1. Codein 2. Cimetidine 3. Digoxine 4. Glibenclamide 5. Griseofulvin 6. Indomethacin 7. Phenytoin 8. Propranolol 9. Erythromycin 10. Charcoal activated 11. Hyoscine butyl-bromide 12. Isosorbide Dinitrate 13. Neostigmine 14. Nicotinamide 15. Ergotamine	1. Phenytoin 2. Chlorpromazine 3. Insulin(Soluble) 4. Insulin(Intermediate acting) 5. Lidocaine 6. Erythromycin 7. Propranolol 8. Salbutamol 9. Hyoscine butyl-bromide

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16.Glyceril trinitrate
17.Hydro-chloro-thiazide
18.Potassium Iodide
19.Promethazine
20.Pyridoxine
21.Riboflavin
22.Senna
23.Thiamine
24.Vit.K
25.Nystatin
26.Reserpine

One	1. Phenobarbital 2. Salbutamol	1. Sod. Bicarbonate 2. Pot Chloride
Two	1. Frusemide	1. Oxytocin/ Syntocinon 2. Ampicilln 3. Frusemide
Three	1. Chorpromazine	1. Promethazine
Four	1. Metronidazole 2. Ibuprofen	
Five	1. Hyd.Eth.Theophyllin/ Aminophyllin 2. Vit. C.	1. Hyd.Eth.Theopyllin /Aminophyllin
Six		1. Atropine 2. Ergometrine .(methargin) 3. Fort Benz Penicillin 4. Benzyl Penicillin 5. Fort Pro. Penicillin

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Seven	1. Ergometrine 2. Mebendazole 3. Chloramphenicol	1. Pethidine 2. Diazepam
Eight	1. Chl. Pheniramie Maleate 2. Penicillin V 3. Sulfa Meth+Co-trimeth 4. Ampicillin	1. Adrenaline 2. Glucose/Dextrose (IV)
Nine	1. Aspirin 2. Tetracycline	
Ten	1. Prednisolone 2. Antacid(Mg trisil + Al Hyd.) 3. Vit. B.Complex 4. Diazepam 5. Dexamethazone	
Eleven	1. Paracetamol	1. Dexamethazone 2. Vit. B.Complex/ Hydr.Cobalan/ Multivit 3. Glucose + Sod. Chloride (IV) 4. Saline (IV)

The table shows that 26 out of 49 (53%) tablets/capsules and 9 out of 29 (31%) injections given in the ICRSD essential drugs list are not available at any time in the year at PHCs/RHs. We did not find a single drug from the ICRSD list, which is supplied to all the PHCs in a year. The most widely supplied tablets/capsules (irrespective of quantity) is paracetamol which is supplied to 11 out of 13 PHCs/RHs. Of the injections,

dexamethazone, vit. B.Complex and glucose saline were supplied to 11 out of 13 PHCs/RHs.

Drugs and Pharmaceuticals : Recommendations

A. Number of Drugs for the PHC:

1. The list of 65 drugs for which 80% of total budget for medicine must be spent, is an incomplete list of essential drugs needed at the PHC. In fact, this list contains only 19 injections, and 22 tablets/capsules. (total 41). (This list excludes drugs needed for the national programmes). Even in this list 5 injections and 4 tablets/capsules are inessential and not recommended for use at the PHC level both by the WHO and the international consultation on rational selection of drugs. (ICRSD).

2. The ICRSD has recommended a list of 49 tabs/caps and 29 injections essential for use at the PHC level. The government list should be updated to include these drugs. (this list also does not include drugs needed for national programmes).

B. Quantity of Essential Drugs Supplied at the PHC :

3. The quantity of essential drugs supplied to the PHCs is most irregular. In order to make projections about the quantity of each drug needed, an analysis of disease pattern reported amongst people using PHC services and an analysis of prescriptions by the doctors must be carried out on regular basis. This will also provide much needed data to improve doctors diagnostic skills and prescription practices.

4. The quantity of drugs supplied to the PHC should be sufficient and the drugs supplied are used rationally so

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that the need to write outside prescription is kept to the minimum.

C. Single Ingredient and Generic Drugs :

5. Except where the combinations of certain drugs are scientifically recommended by the pharmacology text books and the WHO list, all other combination drugs should be completely prohibited from the PHC. The DHO and the Directorate should be strictly instructed not to purchase combination drugs.

6. All banned and bannable drugs and hazardous drugs must never be allowed to be purchased by the authorities. a periodically updated list of such drugs must be provided to the administrators and doctors.

7. All drugs supplied to the PHC should be generic formulations. The support system needed for such supply of sufficient number and quantity of generic drugs must be created immediately. The purchase and supply of brand drugs should be allowed only in dire exceptional circumstances. However if the brand drugs are banned as a part of the rational drug policy at national level, the implementation of this recommendation would become very easy.

D. Reorientation of Doctors and Health Workers to Promote Rational Therapeutic Practices :

8. The provision of only rational drugs in sufficient quantity should be matched by the reorientation of Doctors and Health workers to inculcate rational therapeutic practices. The reorientation should be carried out by providing scientific information. Following this, the rational therapeutic practices must be implemented firmly. In order to make it a permanent

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feature, periodic and regular prescription audits of the doctors and health workers must be carried out.

9. All prescriptions, including those given in exceptional circumstances for purchase of drugs from outside, must be in generic names only.

10. The PHC health workers should be provided with a detailed list of essential drugs needed at the PHC level and they should be encouraged to send their opinion about the need to add any drug in the list for that PHC. Such recommendation should be supported by the information pertaining to the health situation in that PHC area. Such interaction should lead to, in a course of time, flexible essential drugs lists for different PHCs which can cater to all specific needs of the concerned PHC. The list of PHC essential drugs should be prominently displayed in each PHC.

11. There is an urgent need for preparing a detailed informative and scientific pharmacopoeia applicable to PHC and RH based on the rational drugs needed at the PHC. A copy of such pharmacopoeia, in English as well as in Marathi, must be supplied to all health workers and to all those joining services. A copy of the pharmacopoea should be compulsory kept in an easily accessible place in the doctor's chambers, the dispensary, the wards and the sub-centres.

E. Drug Information System :

12. Drug information and continuous education of doctors and health workers is of utmost importance to maintain quality of care, enhance credibility of government services and build and maintain necessary confidence for clinical work amongst doctors and health workers. Possibly the drug information could be kept as an

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important part of the continuing education rather than making it separate educational programme. However, it should be one of the priority subject dealt with in the continuous education process.

13. Periodic updating of pharmacopoeia should be undertaken.

14. For thousands of doctors working in the PHCs in the country there is not a single scientific medical journal which can provide a forum for debate, reporting experiences, publication of scientific papers etc. such journal should be promoted as an autonomous venture of doctors supported by the government and beyond the preview of the administrative action by the health officers. Such publication should in particular focus of the drugs and their rational use.

15. The medical representatives and the giving and taking of drug samples and promotional literature should be strictly banned at the PHC, RH and the DHO's office.

F. Drug Purchase and Distribution :

16. Doctors and health workers, oriented for the rational therapeutics, should be further trained to make annual and monthly projections for the need of drugs at the PHC. The projections and requisitions must be based on the essential drugs list. The drugs needed in addition to those given in the list must be scientifically justified and should be appropriate for the use at the PHC level. As of now it appears that the drugs list is sufficient to meet most of the PHC needs except in few areas where some unique disease pattern warrant extra drugs. The projections and requisitions of drugs should become the basis on which the purchasing and distribution of drugs are done by the DHO's office.

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17. Concept and practice of keeping minimum stock of essential drugs at the PHC, RH and sub-centres must be immediately introduced and strictly implemented.

G. Drug Budget :

18. Given current irrational prescription/therapeutic practices, supply of combination, irrational and hazardous drugs etc. it is difficult to estimate upto what extent the present budget of Rs.15,000 is adequate or inadequate. In the context of continued shortage of drugs at the PHC, it is urgently required that proportion of wasteful expenditure for irrational and hazardous drugs is accurately estimated at the district and the PHC level.

19. A quick study, should be conducted to estimate savings affected by purchasing only single ingredient, generic bulk drugs. It will also give an estimation of upto what level the supply of rational and essential drugs can be augmented within the existing budget. Such study would also show the need to increase budgetary allocation, if any, for the PHCs. We recommend that such study should be carried out on the experimental basis for one year in three representative districts of the state. Such study should be entrusted to some voluntary institution which has in last decade or so worked for the rational selection and use of the essential drugs.

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